

## Sale and Use of Aftermarket Catalytic

AGENCY: Environmental Protection Agency {EPA}

ACTION: Notice of exercises of enforcement discretion.

SUMMARY: This action announces an interim enforcement policy regarding the sale and use of replacement catalytic converters ("converts") for motor vehicles. The basis for this interim enforcement policy is described elsewhere in today's Federal Register under the heading "Sale and Use of Aftermarket Catalytic Converts.

Notice of Proposed Enforcement Policy. From the date of publication of this notice, EPA will exercise its enforcement discretion not to prosecute any installer, seller, or manufacturer of replacement converters that voluntarily complies with the guidelines proposed in the Notice of Proposed Enforcement Policy, until a final decision is made on the Proposed Enforcement Policy.

**ADDRESS:** Any comments and information regarding this notice may be submitted to the docket for the Proposed Enforcement Policy, Docket No. 1-84-31, located in the Environmental Protection Agency, Central Docket Section, West Tower Lobby, Gallery I, LF.131, 401 M Street, SW, Washington, DC 20460. The docket may be inspected weekdays between 8:00 a.m. and 4:00 p.m. A reasonable fee may be charged for copying.

**FOR FURTHER INFORMATION CONTACT:** Janet Murphy or Steve Albrink (202) 382-2640, Field Operations and Support Division (EN.397F), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

**SUPPLEMENTARY INFORMATION:** As discussed more fully in the Notice of Purposed Enforcement Policy published elsewhere in today's **Federal Register**, the installation, sale or manufacture of a converter which is ineffective or less effective than the new original equipment (OE) converter could constitute unlawful tampering, or causing of tampering, under section 203(a)(3) of the Clean Air Act. Although permitting only new OE converters to be used as replacements would ensure full effectiveness and would not violate the tampering prohibitions, these parts are generally quite expensive and some State and local vehicle Inspection/Maintenance (I/M) program officials are reluctant to require converter replacement for missing or damaged converters because of this expense. The proposed enforcement policy described elsewhere in today's **Federal Register** is intended to encourage the development of inexpensive, multiple-application replacement converters, and ensure the effectiveness of these

products by allowing their use as replacements in certain circumstances, provided they meet specified criteria EPA has requested comments on that proposed policy.

EPA hereby gives notice that the enforcement policy guidelines and performance criteria proposed elsewhere in today's **Federal Register**, as Appendix IX to 40 CFR Part 85, will be, from the date of publication of this notice and until a final decision is made on the proposed enforcement policy, the basis for the exercise of EPA's enforcement discretion with regard to the enforcement of the tampering prohibition against sellers, installers and manufacturers of aftermarket catalytic converters. Specifically, although the final policy may be issued with substantial modifications, or not at all, depending on the comments received, no installer, seller, or manufacturer voluntarily complying with the interim guidelines will be prosecuted for tampering as a result of following the proposed guidelines during the interim period before the final policy is published or the proposal is withdrawn. However, the installation or sale of a converter not complying with the interim guidelines, and which is not a new OE converter or its equivalent (as defined in the proposed policy) or a "certified" converter, may be considered tampering or the causing thereof.

This notice of the exercise of enforcement discretion is intended to supersede EPA's Mobile Source Memorandum 1A only with regard to new or used aftermarket converters.

### **Additional Information**

Under Executive Order 12291, EPA must judge whether an action is "major" and therefore subject to the requirements of a Regulatory Impact Analysis. This action is not major because it is not likely to result in:

- (1) An annual effect on the economy of \$100 million or more;
- (2) A major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or
- (3) Significant adverse effect on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets. In fact, this interim enforcement policy may allow additional businesses to enter the catalyst replacement market to produce, market, or install acceptable quality replacement catalysts. It may also lower cost to consumers and increase competition since vehicle manufacturers' dealerships will no longer be the only suppliers

of acceptable catalysts.

This action was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291. Any comments from OMB and any EPA response to such comments are available for public inspection in the docket.

Dated: July 25, 1986

Don R. Clay,  
Acting Assistant Administrator for Air and Radiation

Requirements of Section 3 of the Executive Order 12291.

List of Subjects in **40 CFR Part 65**  
Air pollution Control

**Authority: 42 U.S.C. 7413, 7601**

Dated: July 24, 1986

James M Seif, Regional Administrator, Region III  
(FR Doc. 86-17580 Filed 8-4-86; 8:45 am)

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**40 CFR Part 85**

**[FRL-2974-4]**

### **Sale and Use of Aftermarket Catalytic Converters**

**AGENCY:** Environmental Protection Agency.

**ACTION:** Notice of proposed enforcement policy.

**SUMMARY:** This action announces a proposed enforcement policy regarding the sale and use of replacement catalytic converters ("converters") for motor vehicles. The installation, sale of manufacture of a converter which is ineffective or less effective than the new original equipment (OE) converter could constitute tampering or causing tampering under section 203(a)(3) of the Clean Air Act. Although permitting only new OE converters to be used as replacements would ensure full effectiveness, these parts are generally quite expensive and some State and local vehicle Inspection/Maintenance (I/M) program officials are reluctant to require converter replacement for missing or damaged converters because of this expense. The proposed enforcement policy is intended to encourage the development of inexpensive, multiple-application converters, and to ensure the effectiveness of these products, by allowing their use as replacement converters in certain circumstances, provided they meet specified criteria.

**DATES:** Comments or requests for public hearing must be received

on or before November 3, 1986.

**ADDRESS:** All comments and information should be submitted to Public Docket No. A-84-31, located at the Environmental Protection Agency, Central Docket Section, West Tower Lobby, Gallery I, LE-131, 401 M Street, SW, Washington, DC 20460. The docket may be inspected weekdays between 8:00 a.m. and 4:00 p.m. A reasonable fee may be charged for copying.

**FOR FURTHER INFORMATION CONTACT:** Janet Murphy or Steve Albrink (202) 382-2640, Field Operation and Support Division (EN-397F), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

**SUPPLEMENTARY INFORMATION:**

Most light-duty motor vehicles built since 1975 have been certified to meet Federal or California emission standards with catalytic converters ("converters"). The converter is the major emission control device used by vehicle manufacturers on light-duty vehicles primarily to reduce hydrocarbons and carbon monoxide emissions. Three-way converters, which have been used widely since 1981, also help control oxides or nitrogen emissions. If a vehicle is properly maintained and not operated on leaded gasoline, the converter should not require replacement for the entire life of the vehicle. However, improper maintenance, converter removal, accidents or the repeated use of leaded fuel can damage or destroy the effectiveness of the converter so that the vehicle is unsafe, noisy, or cannot comply with emissions standards or local inspection requirements, thus necessitating the installation of a replacement converter.

On November 25, 1980, EPA published regulations regarding the voluntary certification of aftermarket parts pursuant to section 207(a)(2) of the Clean Air Act (see 40 CFR Part 85, Subpart V). These regulations contain testing procedures for certifying oxidizing catalytic converters and essentially were designed to require certified aftermarket converters to be as good as or better than the OE converters they are to replace. (To this date, no one has certified converters under the program.) The purpose of these regulations is to protect vehicle owners' emissions performance warranty rights under section 207(b)(2) of the Act<sup>1</sup> if they use such "certified" parts, and to protect

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<sup>1</sup>Under Section 207(b)(2), if a vehicle has been properly maintained and used, yet fails at any time during its useful life to conform to applicable emission standards (e.g., by failing an eligible state or local emissions test), and thus causes the owner to bear some sanction, the vehicle manufacturer is required

service and repair facility operators installing "certified" parts from liability for "tampering" violations under section 203(a)(3) of the Clean Air Act.

The proper use of a converter certified to meet the voluntary aftermarket parts certification regulations will protect the vehicle owner's emissions performance warranty rights and can be installed anytime without subjecting the installer to liability for violating section 203(a)(3).

On December 5, 1984, EPA issued a notice announcing public workshops to explore the possibility of establishing alternative testing procedures for aftermarket converters and requesting information and comments on the subject 49 FR 47550 (1084). That notice stated that the workshops might result in the amendment of the voluntary aftermarket parts certification regulations. The notice also included draft converter test procedures and criteria to help initiate the discussion of topics. Workshops were subsequently held in January 1985 to discuss the relevant issues. Written comments were invited for a period of 30 days after the last workshop.

After reviewing the information received, EPA decided against amending the regulations with regard to the test procedures and acceptance criteria for catalytic converters to be "certified" under section 207(a)(2).<sup>2</sup> However, as discussed below, EPA has developed a proposed enforcement policy (guidelines) on how it will enforce section 203(a)(3) with regard to the installation of aftermarket converters. Although the proposed enforcement guidelines merely reflect EPA intended exercise of its enforcement discretion and are not regulations, EPA proposes to add those guidelines to 40 CFR Part 85 Appendix IX, for the convenience of any persons who may choose to follow the guidelines.

In addition, as discussed elsewhere in today's **Federal Register**, the proposed guidelines described here will be from the date of publication of this notice, the interim policy of EPA with regard to the enforcement of the tampering prohibition against sellers,

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to correct the failure at its expense.

<sup>2</sup>EPA is, however, preparing another proposal to amend certain aspects of the aftermarket parts certification regulation in accordance with a court order in *Speciality Equipment Manufacturers Association v. Ruckelshaus*, 720 F2d 123 (D.C. Cir. 1983). The provisions subject to that proposal are not at issue here.

installers, and manufacturers of aftermarket catalytic converters. Although the final policy may be issued with substantial modifications, or not at all, depending on the comments received, no installer, seller, or manufacturer voluntarily complying with the interim guidelines will be prosecuted for tampering as a result of following the guidelines during the interim period before the final policy is published or this proposal is withdrawn. However, the installation or sale of a converter not complying with the interim guidelines, and which is not a new OE converter or its equivalent (as defined in the proposed policy) or a "certified" converter, may be considered tampering or the causing thereof.

Section 203(a)(3) of the Clean Air Act, 42 U.S.C. 7522(a)(3), prohibits parties named in the statute from tampering with emission control systems on motor vehicles and prohibits any person from causing tampering. Specifically, section 203(a)(3) prohibits vehicle manufacturers, dealerships, service and repair facilities and fleet operators from removing or rendering inoperative any emission control device or element of design installed on or in a motor vehicle. In addition, section 203(a) prohibits any person from causing such tampering. Tampering with emission controls can include removing, disabling or destroying a part of the emission control system, or installing an incorrect or ineffective part in or on any motor vehicle designed to meet Federal or California emissions standards. The installation of a new OE converter identical to that with which the vehicle was originally manufactured would not be a violation of the Act.

Many urban areas have air pollution problems caused primarily by motor vehicles. The majority of these areas have been or will be implementing vehicle inspection or testing programs. EPA's 1984 Tampering survey revealed that 16% of all vehicles have had their converter removed or have used leaded gasoline, which in effect ruined the converters' ability to lower emissions. Many of these vehicles are now or soon will be subject to inspection or testing programs.

EPA is actively promoting state and local tampering inspection programs which would require converter replacement where missing or lead-poisoned converters are discovered. There is no question that effective converters in place of lead-poisoned or missing converter would directly improve compliance with emission standards and benefit air quality. However, the Agency believes that some inspection officials have been or will be extremely reluctant to require converter replacement because OE (or equivalent) converters are relatively quite expensive (e.g., between \$300 and \$500 installed). Thus, EPA has decided that its success in persuading State and local governments to implement such programs depends in part, on the availability and cost of

replacement converters. EPA is also concerned that replacement converters used in any such program be of sufficient quality to provide vehicles with a reasonable opportunity to comply with applicable standards and to provide as much air quality benefit as reasonably possible.

It has been suggested that the major reason that new OE converters cost so much is that they are engineered and designed only for specific applications. If aftermarket converters could be consolidated into a limited number of multiple-application converters, then the costs to the consumer could be reduced considerably. Thus, the proposed enforcement policy is intended to foster the development and allow the use of less expensive, multiple-application replacement converters.

The proposed performance criteria are based on EPA data on the performance of properly maintained OE converters with less than 50,000 miles of use. The criteria for new aftermarket converters require such converters to perform effectively for up to 25,000 miles of use, as demonstrated by testing on worst case vehicles, so that the emissions reduction benefits for the average vehicle and the total fleet that receive them would be greater than the criteria might indicate. While the proposed policy specifies that prototype converter aging is to be by vehicle mileage accumulation, it also allows for accelerated aging if it can be demonstrated that the procedures are as stringent as vehicle mileage accumulation. The Agency is working with the industry to develop such an aging alternative which could be available for the final policy.

The performance criteria for used aftermarket converters are designed to screen out the used OE converters which have obviously been extensively fuel switched or whose performance has been severely affected by prior use. As a result, each used converter must be tested by a bench test procedure under the proposed criteria.

EPA recognizes that converters which meet the proposed criteria of these guidelines may not perform at the same level over as extended a period as the new converters installed by the vehicle manufacturer and that their use therefore may not completely protect the vehicle owner's emissions warranty rights under section 207 of the Act.<sup>3</sup> In such cases, EPA believes that the

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<sup>3</sup>Under section 207(b)(2)(A) of the Act, an owner who has removed or poisoned his original converter by misfueling probably has already voided the manufacturer's performance warranty for the catalyst itself by failing to properly maintain the vehicle. Of course, if an owner wishes to preserve whatever performance warranty rights remain with regard to emission-related parts

substantial emissions control provided by converters meeting the criteria of this policy would be a great improvement compared to the lack of control caused by missing or poisoned converters. Thus, the primary purpose of the proposed policy is to support state and local antitampering inspection programs by encouraging them to require converter replacement where the converter is missing, lead poisoned or otherwise ineffective.

EPA does not intend to permit the use of aftermarket converters meeting the criteria discussed below to restore the emission control capabilities of vehicles originally equipped with converters and operated outside the U.S., Canada or Mexico and subsequently brought back to the U.S. pursuant to 40 CFR 85.1509, or to replace properly operating OE converters, or as replacement converters for warranty or recall purposes. Since properly maintained converters normally would not require replacement for the life of the vehicle, such uses will be considered violations of section 203(a)(3) of the Act.

EPA also recognizes that in some limited circumstances the original converters may fail or be damaged and require replacement for reasons other than misfueling or converter removal. Under these circumstances, if the vehicle is less than 5 years old, has accumulated less than 50,000 miles, and a state or local inspection program has not determined that the existing converter needs replacement, the vehicle's expected remaining useful life may be significant and should require replacement with a new OE or equivalent converter. Moreover, the 5 year/50,000 mile emissions warranty presumably would be applicable to those vehicles. For vehicles over 5 years old or with more than 50,000 miles, on the other hand, it may be appropriate to allow the use of aftermarket converters meeting the criteria of these guidelines if there is a legitimate need for replacement, even though not due to removal or poisoning of the converter, and even if the State or local inspection program has not ordered replacement.

Thus, this proposed and interim policy only applies to converters that meet the criteria described in the attached guidelines and that are used as replacement converters; (1) On a vehicle which is missing a converter, or (2) pursuant to a determination by a State or local inspection program that the existing converter has been

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affected by converter performance, the owner could elect to replace the converter with an OE or certified converter. Under the 207(a) warranty, if the use of anything but an OE or equivalent or certified converter has caused the malfunction of any other emission part or emission-related part, that part should not be considered "defective" and may not be covered under that warranty.



lead-poisoned or damaged or otherwise needs replacement, or (3) for vehicles over 5 years or 50,000 miles old where a legitimate need for replacement has been established and documented. All other converter replacements by regulated parties are potentially subject to enforcement actions under section 203(a)(3) and, thus, the replacement converters must be OE or equivalent or certified converters. In order to prevent converters meeting the criteria in this proposal from being improperly used to replace properly operating converters, EPA will be monitoring their use. If it becomes apparent that abuses are occurring, EPA may change the final policy, or eliminate the policy entirely, so that the use of such converters by named parties may be considered a violation of section 203(a)( under any circumstances.

The proposed policy is intended to supersede EPA's Mobile Source Enforcement Memorandum 1A only with regard to new or used aftermarket converters.

### **Additional Information**

Under Executive Order 12291, EPA must judge whether an action is "major" and therefore subject to the requirements of a Regulatory Impact Analysis. This action is not major because it is not likely to result in:

- (1) An annual effect on the economy of \$100 million or more;
- (2) A major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or
- (3) Significant adverse effect on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets. In fact, this interim enforcement policy may allow additional businesses to enter the catalyst replacement market to produce, market, or install acceptable quality replacement catalysts. It may also lower cost to consumers and increase competition since vehicle manufacturers' dealerships will no longer be the only suppliers of acceptable converters.

This action was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291. Any comments from OMB and any EPA response to such comments are available for public inspection in the docket.

Finally, the proposed policy will impose reporting and recordkeeping requirements for those companies which voluntarily enter this market. Information collection requirements affected

by the notice have been submitted to OMB for review under the provisions of the Paperwork Reduction Act. Any written comments from OMB or response for EPA will be included in the docket.

### **List of Subjects in 40 CFR Part 85**

Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Warranties.

EPA proposes to amend the table of contents to 40 CFR Part 85 by adding a reference to Appendix IX, entitled Enforcement Policy For Sale and Use of Aftermarket Catalytic Converters.

Dated: July 25, 1986.

**Don R. Clay**, *Assistant Administrator*

### **PART 85 - [AMENDED]**

1. The authority citation for part 85 continues to read as follows:

**Authority: 42 U.S.C. 7522(a)(3)**

2. EPA proposes to amend 40 CFR Part 85 by adding a new Appendix IX, to read as follows:

Appendix IX - Enforcement Policy for Sale and Use of Aftermarket Catalytic Converts

#### *A. General Requirements*

Regulated parties shall install new or used aftermarket catalytic converters ("converters") on motor vehicles only if the converters are represented in writing by the distributor or manufacturer to have been tested according to the following procedures and to have met the performance criteria specified below, or are certified [under 40 CFR Part 85, subpart V) or are new or equivalent to new original equipment (OE) converters.

"Regulated parties" mean any person engaged in the business of repairing, servicing selling, leasing or trading motor vehicle engines or who operates a fleet of motor vehicles. "Equivalent" means identical or better in all emission related respects as determined by the U.S. Environmental Protection Agency (EPA).

New or used aftermarket converters that meet the performance criteria specified herein may be installed in the following situations (1) If the vehicle is missing a converter; (2) If a state or local inspection program has determined the existing converter has been lead-poisoned or damaged or otherwise needs

replacement; or, (3) If the vehicle is over 5 years old or has more than 50,000 miles and a legitimate need for replacement has been established and documented. The third situation normally would include only plugged converters or those damaged to the point where unrepairable exhaust leaks are present. Any other converter replacement must be with a certified or new OE or equivalent converter or it will be considered tampering.

In order to establish and document that the circumstances permitting replacement of an original or missing converter with an aftermarket converter meeting the required performance criteria exist, the installer must include the customer's name, complete address, and the make, model year and mileage of the vehicle on the service invoice along with a stated reason for replacement. Where a state or local government has determined that a convert is damaged or needs replacement, the service or repair facility also must retain a copy of the written statement or order by a proper government representative which indicates that the converter should be replaced and attach it to the invoice. Where the replacement need has not been verified by a proper state or local government representative, the customer and a representative of the service or repair facility must sign a statement verifying that replacement is justified. This statement, which may be contained on the invoice or separately, shall consist of the following:

Catalytic converters are emission control devices which are designed to last the life of the vehicle and do not normally require replacement. Futhermore, if the vehicle is properly use and maintained, original converters are covered by the emissions control warranty for 5 years or 50,000 miles. Federal law prohibits repair businesses from replacing these devices except under certain limited circumstances.

In order to verify that the proper circumstances exist, the owner of the vehicle on which such repairs are made and a facility representative must sign the following statement.

- The vehicle is over 5 years old or has more then 50,000 miles on it and the catalytic converter required replacement because

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OR

- The vehicle's catalytic converter was missing when the vehicle was brought in.

Vehicle Owner's Signature

## Facility Representative's Signature

Installers must retain copies of the invoices and statements for six (6) months, and the replaced converters (if any) for at least 15 days from the date of installation of the replacement converters. Replaced converters must be marked in such a way that they can be identified with particular customer invoices and statements and be available for EPA inspection.

All other converter replacements or installations; such as on vehicles imported without converters pursuant to 40 CFR 85.1509, or on vehicles covered under warranty or being recalled also must be with new OE or equivalent or "certified" converters. Persons who install or sell aftermarket converter that do not meet the criteria and conditions specified in these guidelines may be considered liable for tampering or causing tampering.

These guidelines shall be effective all aftermarket converters manufactured or recycled after NOV 3, 1986 and apply to converter which meet the definitions of and criteria for new or used aftermarket converters as stated below.

### *B. Test Procedures and Performance Criteria*

#### 1. New Aftermarket Converters

A new aftermarket converter is defined for purposes of these guidelines to be a converter which has: (1) All new materials; or, (2) any new materials which make the converter not equivalent to an OE converter; or, (3) any construction which makes the converter not equivalent to an OE converter. New converters require limited vehicle durability testing by the converter manufacturer on worst case vehicles in each application category and the converters must meet the exhaust emission control efficiency requirements listed below. The converter manufacturer must demonstrate that the converters meet applicable performance standards as described below after 25,000 miles, which is considered half their useful lives.

(a) Two vehicles in each application category are normally required to conduct the mileage accumulation and testing. The application category is to be defined by the converter manufacturer. Application category can refer to the types of vehicles and/or engines the converters are to be installed on, or the types of OE converters the aftermarket converters are to replace. In addition, the converters must be identified as one of the following; (1) Oxidation converter, (2) three-way converter; or (3) three-way-plus-oxidation converter.

(b) The vehicles for which the converter is an appropriate

installation are to be defined by the converter manufacturer. The converter manufacturers must supply this information with each converter so that the installer can easily and clearly know the vehicle application(s).

(c) The worst case vehicles in each application category are required to be tested by the converter manufacturer. Absent any information supplied by the converter manufacturer, the worst case for each application category will be the highest test weight/largest engine displacement within the applications category. This combination is determined by selecting the largest engine displacement within the highest test weight class. Test weight is described in 40 CFR 86.129-80. Information on test vehicle/engine selection is available from EPA's certification summary data.

(d) Durability mileage accumulation shall be conducted on at least two test converters for 25,000 miles each, using the mileage cycle in Appendix IV of 40 CFR part 86 for track mileage accumulation or one that is typical of in-use operation and equal to that cycle for road mileage accumulation. Commercially available unleaded fuel and oils of the grade and quality specified by the manufacturers in the owner's manual shall be used. The vehicles shall be set to manufacturer's specifications, equipped with the test converters for the entire mileage accumulation and records of all vehicle and engine maintenance shall be kept. No maintenance of the converters is permitted. Different vehicles may be used for mileage accumulation and testing if they are equal with respect to emission related parameters (i.e., "slave" vehicle(s) may be used for testing).

(e) As an alternative to vehicle mileage accumulation, accelerated bench testing which simulates the 25,000 miles accumulation may be used if it can be demonstrated to EPA in advance that the procedures are at least as stringent as vehicle mileage accumulation.

(f) At the end of the mileage accumulation, two cold start Federal Test Procedures (FTP) tests (including the heat-build portion of the evaporative test) described in 40 CFR part 86 shall be performed on each vehicle. The pair of test results will be considered consistent if they are within 10% for HC and CO and 15% for No<sub>x</sub>. If the results are consistent, the results shall be averaged to obtain the with converter (w/c) emissions. If the pair are not consistent i.e., not within 10% for HC and CO and 15% for No<sub>x</sub> a third test may be run. The results of the third test may be averaged with either of the first two test if the results pair is consistent, i.e., within 10% for HC and CO and 15% for No<sub>x</sub>. If the third test does not result in a consistent

pair, then the design will not be acceptable unless the manufacturer can demonstrate to EPA's satisfaction that the first three tests were not repeatable due to non-converter problems (e.g., test equipment, etc.) And that there is repeatability on subsequent tests.

(g) If the w/c tests produce a consistent pair, the aftermarket converter shall then be removed and replaced with an exhaust pipe which adequately simulates the exhaust backpressure characteristics of the converter. No other maintenance or modification to the vehicles is permitted between with- and without-converter configurations. Two more cold start FTP tests shall be run on each vehicle with converter removed. The results shall be averaged (if they meet the above consistency requirements) to obtain the without-converter (wo/c) baseline values.

(h) The converter efficiency shall be determined using the following formula:

$$\text{efficiency} = \frac{100 (\text{emissions (wo/c)} - \text{emission (w/c)})}{\text{Emissions (wo-c)}}$$

In order to be an acceptable converter, the converter efficiency determined above must be greater than or equal to the values shown in the following table for each of the two converters.

(See original document for TABLE 1)

(i) Converters produced after the qualification process has been successfully completed shall be identical to the qualified converters in all material respects. A listing of these characteristics and the information to be supplied to EPA shall include the following:

- (1) Catalyst supplier and address.
- (2) General type of converter (e.g., oxidation, reduction, three-way, etc.)
- (3) Number of each type of catalyst used per can (each individual monolith unit or "biscuit" is considered to be a separate catalyst for purposes of determining the number of catalysts per can).
- (4) Substrate (e.g., monolithic, pelleted) give configuration construction technique (e.g., extruded, laid-up, formed, Dravo disk, etc.), composition, supplier and address composition of active constituents in substrate (grams or troy ounces); for monolithic substrates, give number of cells per square inch of frontal area and design tolerances, nominal cell wall thickness (e.g., in mils) for pelleted substrates give pellet shape and dimensions, pellet bulk density specify (if applicable) the use

of more than one type of pellet (e.g., Rh or Pt/Pd), specify any geometrical distribution of pellets and (if this is controlled in production) specify the mean impregnation depth (e.g., in microns) of active materials and include production tolerance.

(5) Washcoat - give composition of active constituents and total active material loading (grams or troy oz) in washcoat.

(6) Active material - give composition of active constituents, loading of each active material including design tolerances, total active material loading including design tolerances (grams or troy oz).

(7) Container - dimensions, volume, materials used, technique of containment and restraint, method of constructing container, canner (if different from catalyst supplier), and insulation and shielding (converter and/or vehicle).

(8) Physical description - dimensions (e.g., length, width, height, etc.), weight (lbs), volume including design tolerances, active surface area (BET), and total active surface area including design tolerances.

(j) The converter manufacturer shall enclose with each converter a statement that it has been designed and manufactured to meet the EPA emission reduction requirements for the designated type of converter and shall warrant that when the vehicle is properly maintained, the converter will meet the emission reduction requirements specified in paragraph (h) for 25,000 miles and that the converter will not constitute a safety hazard.

(k) To ensure that new aftermarket converters have adequate external durability which will make them effective alternatives to OE converters, the converter manufacturer must design and warrant the external converter shell, including the end pipes, to last for five (5) years or 50,000 miles (whichever comes first) from the date of installation.

(l) The converter manufacturer shall enclose with each converter the specific vehicle applications of that converter and a warranty application card to be returned to the converter manufacturer which will include the vehicle owner's name and address, phone number, the make, model, year and mileage of the vehicle, the date of installation, the installing dealer's name and address and the part number(s) installed. All such cards or applications must be retained by the convert manufacturer for a period of five (5) years.

(m) New converter manufacturers shall report to EPA semi-annually the information contained on the warranty cards received and the number of each type of converter produced during the period. The warranty card information shall consist of either a listing of the names and addresses of dealerships purchasing new converters, and the number of each type of converter sold or installed by

each dealer or copies of all completed warranty cards received by the manufacturer. In either case, such information shall be submitted within 30 days of the end of each period. The reporting periods shall end on June 30<sup>th</sup> and December 31<sup>st</sup> of each year.

## **2. Used Converters**

A used converter is defined for purposes of these guidelines as a previously used OE converter which does not meet the definition of a new converter. This includes used pelleted OE converters which have had the pellets replaced with new or used OE equivalent pellets. For used converters, no durability testing is required but each converter must be tested as specified below. Only used OE converters can qualify under this procedure. The types of tests are: (1) Container mechanical integrity check, (2) substrate mechanical integrity check, and (3) performance test.

(a) Each converter must be identified with respect to application category. The application category is defined as those vehicles for which the converter was the original production converter.

(b) The converter shall be inspected by the remanufacturer to determine which type of converter it is - oxidation converter, three-way converter or three-way plus-oxidation converter - and that the container (the "can") is structurally sound. There must be no leak paths in the can. The can must have acceptable backpressure characteristics, i.e., not be plugged. The substrate must be sound and not be melted or attrited. It shall not rattle.

(c) The performance test which shall be used for used converters is similar to the General Motors "Cell 102" test, and is as follows: A converter originally at room temperature is subjected to an exhaust flow of known composition and temperature. Because of the exothermal chemical reactions that occur, the converter heats up. Therefore two important converter parameters, light-off and stabilized efficiency, are measured on the same test. Each converter is tested and the exhaust gas constituents are read before and after the converter. Converter efficiency values for HC and CO conversion are computed at 120 seconds and 200 seconds. A light-off test and stabilized efficiency test can be performed consecutively. The exhaust is set to the control parameters while bypassing the converter through a pipe set to a backpressure equal to the test system. At time=zero, the exhaust stream is switched into the converter system and a strip chart records exhaust gas constituents (before and after the converter) versus time. From this chart the conversion efficiency vs. Time curve can be established. Each converter must meet all applicable requirements in Table 2.



(See original document for TABLE 2)

The control parameters for this test are:

1. Engine type and Displacement: v-8, 350 to 360 CID.
2. Engine speed: 1800 +/- 20 RPM.
3. Converter Inlet CO +/- 0.05% CO
4. Converter Inlet Temperature: 730 ° +/- 30 ° F (set using engine load).
5. Air Injection Pump: 20 CID (Maximum).
6. Air Injection Drive Ratio: 1.5.1 (Maximum).
7. Converter Mounting: The converter may not be located closer than two (2) feet from the location in the exhaust system where the exhaust from the two engine banks is joined together.
8. Converter pre-test temperature: 90 ° F (maximum normally, 100 ° F if room temperature makes it necessary due to outside ambient temperatures above 90 ° F).

(d) At the option of the used converter remanufacturer, small size converters (less than 100 cubic inches of converter volume) may be tested using a smaller engine if the following additional requirements are met: The oxygen concentration at the converter inlet is 5 percent +/- 0.5 percent, and the converter space velocity is not less than 25,000 hr<sup>-1</sup>.

(e) The converter remanufacturer shall enclose with each used converter a statement that it has been tested according to the test procedures for used converters and meets all applicable requirements at the time of testing.

(f) The converter remanufacturer shall enclose with each used converter the specific application(s) of the converter.

(g) The converter remanufacturer shall report to EPA on a semi-annual basis the names and complete addresses of the persons or companies to whom it distributes along with the number of each type converter sold to each. This information shall be submitted within 30 days of the end of each period. The reporting periods shall end on June 30<sup>th</sup> and December 31<sup>st</sup> of each year.

### *C. Labeling*

The converter manufacturer or remanufacturer shall label each new or used converter with a visible, permanent, nondestructible label or stamp, which will identify the manufacturer's code (to be issued by EPA when requested by letter), vehicle application code (to be supplied by the manufacturer to EPA), the month and year of manufacture, and information about whether the converter is new or used. The label information shall be in the following formats:

- (1) New Converters - N/XX/YYYY/ZZZZ

(2) Used Converters - U/XX/YYYY/ZZZZ

N - is for a new converter designation

U - is for a used converter designation

XX - is the manufacturer code issued by EPA

YYYY - is to be a numerical designation of the vehicle application(s)

ZZZZ - is the month and year of manufacture (i.e., "0186 for January, 1986)

#### *D. Manufacturer's and Remanufacturer's Representations*

A manufacturer's or remanufacturer's determination that its converters meet EPA's acceptance criteria does not constitute a certification, accreditation, approval, or any other type of endorsement by the Environmental Protection Agency of any claims concerning pollution control or any other alleged benefits. No claim of any kind, such as "Approved (or Certified) by the Environmental Protection Agency," may be made in any advertising or other oral or written communications. If true, statements such as the following may be made: "meets the emissions reductions requirements and criteria required by the U.S. Environmental Protection Agency which would allow the proper installation of the converter without the installer being liable for violating the tampering prohibition of the Clean Air Act.

#### *E. Confirmatory Testing or Auditing by EPA*

EPA reserves the right to inspect facilities and records, to observe testing and to run confirmatory tests to validate any part of the qualification process. If EPA finds that a manufacturer's or remanufacturer's converters do not meet the applicable criteria, EPA shall notify the manufacturer or remanufacturer of such finding, and that the manufacturer or remanufacturer may be liable for causing tampering for any applicable converter installations (past or future) and that the continued installation of the converters by regulated parties may make those parties liable for violations of section 203(a)(3) of the Clean Air Act.

#### *F. Installation Requirements*

In order for the installation by a regulated entity of an aftermarket converter meeting the conditions described in A through E above, not to be considered a violation of section 203(a)(3) of the Act, the converter must:

- (1) Be installed only in situations as defined in A above;
- (2) Be in the same location as the original converter;
- (3) Be the same type of converter as the original converter (i.e., oxidation, three-way or three-way-plus oxidation);
- (4) Be the proper converter for the vehicle application as

determined and specified by the manufacturer;

(5) Be connected properly to any existing air injection components on the vehicle;

(6) Be installed with all the other required converters for the particular application if more than one converter was installed originally by the vehicle manufacturer or in the case of new aftermarket converters, if more than one converter was specified by the converter manufacturer, and

(7) Be accompanied by the warranty information card, filled in by the installer, if the converter is a new converter.

#### *G. Notification of EPA by Catalyst Manufacturers and Remanufacturers*

Any converter manufacturer or remanufacturer which markets converters under these guidelines must notify EPA of its intent to do so thirty (30) days prior to the actual introduction of each product line. New converter manufacturers must include or have submitted a summary of test results including vehicles tested, method of mileage accumulation, name and location of testing facility, test results, intended vehicle application(s), and the converter information specified in B.1.(i). Used converter remanufacturers must include a description of the test facility and its location and the intended vehicle applications of the converter(s). The information shall be sent to EPA (EN-397F), 401 M Street, SW, Washington, DC 20460. Manufacturers and remanufacturers shall include any other information which they deem relevant to a determination that the subject converters meet the requirements set forth in these guidelines.

#### *H. Notification of Dealers and Distributors by Converter Manufacturers and Remanufacturers.*

Any converter manufacturer or remanufacturer which market under these rules shall have a system in place to notify and shall notify all of its known dealers and distributors of the proper installation requirements and restrictions which are applicable to parties named in section 203(a)(3) of the Clean Air Act as they apply to the use of its converter. If the manufacturer or remanufacturer is notified by the EPA that converters produced or sold by it do not meet the applicable acceptance criteria described above, the manufacturer or remanufacturer shall promptly notify all of its known dealers and distributors of that fact and that the continued installation of the affected converters may be considered to be violations of section 203(a)(3) of the Clean Air Act.

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